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## RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/423,035B

DATE: 01/31/2003

TIME: 15:59:40

Input Set : A:\463.4.TXT

Output Set: N:\CRF4\01312003\I423035B.raw

4 <110> APPLICANT: Joyce, Gerald F.  
5 Breaker, Ronald R.  
7 <120> TITLE OF INVENTION: ENZYMATIC DNA MOLECULES  
10 <130> FILE REFERENCE: TSRI 463\_4  
12 <140> CURRENT APPLICATION NUMBER: US 09/423,035B  
13 <141> CURRENT FILING DATE: 2000-01-13  
15 <150> PRIOR APPLICATION NUMBER: PCT/US98/08677  
16 <151> PRIOR FILING DATE: 1998-04-29  
18 <150> PRIOR APPLICATION NUMBER: US 60/045,228  
19 <151> PRIOR FILING DATE: 1997-04-29  
21 <160> NUMBER OF SEQ ID NOS: 150  
23 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
25 <210> SEQ ID NO: 1  
26 <211> LENGTH: 15  
27 <212> TYPE: DNA  
28 <213> ORGANISM: Artificial Sequence  
30 <220> FEATURE:  
31 <223> OTHER INFORMATION: Synthesized  
33 <400> SEQUENCE: 1  
34 cggtaagctt ggcac  
36 <210> SEQ ID NO: 2  
37 <211> LENGTH: 19  
38 <212> TYPE: DNA  
39 <213> ORGANISM: Artificial Sequence  
41 <220> FEATURE:  
42 <223> OTHER INFORMATION: Synthesized  
W--> 44 <221> NAME/KEY: misc\_feature  
45 <222> LOCATION: 8  
46 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide  
W--> 48 <400> 2  
W--> 49 tcactatngg aagagatgg  
51 <210> SEQ ID NO: 3  
52 <211> LENGTH: 38  
53 <212> TYPE: DNA  
54 <213> ORGANISM: Artificial Sequence  
56 <220> FEATURE:  
57 <223> OTHER INFORMATION: Synthesized  
59 <400> SEQUENCE: 3  
60 acacatctt gaagtagcgc cgccgtatag tgacgcta  
62 <210> SEQ ID NO: 4  
63 <211> LENGTH: 80  
64 <212> TYPE: DNA  
65 <213> ORGANISM: Artificial Sequence

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```

67 <220> FEATURE:
68 <223> OTHER INFORMATION: Synthesized
W--> 70 <221> NAME/KEY: misc_feature
71 <222> LOCATION: (16)...(65)
72 <223> OTHER INFORMATION: n = a, g, t, or c
W--> 74 <400> 4
W--> 75 gtgccaagct taccgnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 60
W--> 76 nnnnngtcgc catctcttcc 80
78 <210> SEQ ID NO: 5
79 <211> LENGTH: 28
80 <212> TYPE: DNA
81 <213> ORGANISM: Artificial Sequence
83 <220> FEATURE:
84 <223> OTHER INFORMATION: Synthesized
W--> 86 <221> NAME/KEY: misc_feature
87 <222> LOCATION: 28
88 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 90 <221> misc_feature
91 <222> LOCATION: 28
92 <223> OTHER INFORMATION: 2' 3' cyclic phosphate
W--> 94 <400> 5
W--> 95 gggacgaatt ctaatagcgc tcactatn 28
97 <210> SEQ ID NO: 6
98 <211> LENGTH: 28
99 <212> TYPE: DNA
100 <213> ORGANISM: Artificial Sequence
102 <220> FEATURE:
103 <223> OTHER INFORMATION: Synthesized
W--> 105 <221> NAME/KEY: misc_feature
106 <222> LOCATION: 28
107 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 109 <221> misc_feature
110 <222> LOCATION: 1
111 <223> OTHER INFORMATION: Optional 5 prime biotinylation
W--> 113 <400> 6
W--> 114 gggacgaatt ctaatagcgc tcactatn 28
116 <210> SEQ ID NO: 7
117 <211> LENGTH: 19
118 <212> TYPE: DNA
119 <213> ORGANISM: Artificial Sequence
121 <220> FEATURE:
122 <223> OTHER INFORMATION: Synthesized
W--> 124 <221> NAME/KEY: misc_feature
125 <222> LOCATION: 8
126 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 128 <400> 7
W--> 129 tcactatngg aagagatgg 19
131 <210> SEQ ID NO: 8
132 <211> LENGTH: 8

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```

133 <212> TYPE: DNA
134 <213> ORGANISM: Artificial Sequence
136 <220> FEATURE:
137 <223> OTHER INFORMATION: Synthesized
W--> 139 <221> NAME/KEY: misc_feature
140 <222> LOCATION: 8
141 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 143 <400> 8
W--> 144 tcactatn 8
146 <210> SEQ ID NO: 9
147 <211> LENGTH: 30
148 <212> TYPE: DNA
149 <213> ORGANISM: Artificial Sequence
151 <220> FEATURE:
152 <223> OTHER INFORMATION: Synthesized
154 <400> SEQUENCE: 9
155 ccattctcttc ctatagttag tccggctgca 30
157 <210> SEQ ID NO: 10
158 <211> LENGTH: 15
159 <212> TYPE: DNA
160 <213> ORGANISM: Artificial Sequence
162 <220> FEATURE:
163 <223> OTHER INFORMATION: Synthesized
165 <400> SEQUENCE: 10
166 gtgccaagct taccg 15
168 <210> SEQ ID NO: 11
169 <211> LENGTH: 43
170 <212> TYPE: DNA
171 <213> ORGANISM: Artificial Sequence
173 <220> FEATURE:
174 <223> OTHER INFORMATION: Synthesized
176 <400> SEQUENCE: 11
177 ctgcagaatt ctaatacgac tcactatagg aagagatggc gac 43
179 <210> SEQ ID NO: 12
180 <211> LENGTH: 19
181 <212> TYPE: DNA
182 <213> ORGANISM: Artificial Sequence
184 <220> FEATURE:
185 <223> OTHER INFORMATION: Synthesized
W--> 187 <221> NAME/KEY: misc_feature
188 <222> LOCATION: 8
189 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 191 <400> 12
W--> 192 tcactatngg aagagatgg 19
194 <210> SEQ ID NO: 13
195 <211> LENGTH: 43
196 <212> TYPE: DNA
197 <213> ORGANISM: Artificial Sequence
199 <220> FEATURE:

```

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200 <223> OTHER INFORMATION: Synthesized
W--> 202 <221> NAME/KEY: misc_feature
203 <222> LOCATION: 28
204 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 206 <400> 13
W--> 207 gggacgaatt ctaatacgac tcactatngg aagagatggc gac 43
209 <210> SEQ ID NO: 14
210 <211> LENGTH: 50
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:
215 <223> OTHER INFORMATION: Synthesized
217 <400> SEQUENCE: 14
218 tcacacatct ctgaagtagc gccgccgtat gtgacgctag gggttcgcct 50
220 <210> SEQ ID NO: 15
221 <211> LENGTH: 50
222 <212> TYPE: DNA
223 <213> ORGANISM: Artificial Sequence
225 <220> FEATURE:
226 <223> OTHER INFORMATION: Synthesized
228 <400> SEQUENCE: 15
229 ggggggaacg ccgtaacaag ctctgaacta gcggttgcca tatagtcgta 50
231 <210> SEQ ID NO: 16
232 <211> LENGTH: 50
233 <212> TYPE: DNA
234 <213> ORGANISM: Artificial Sequence
236 <220> FEATURE:
237 <223> OTHER INFORMATION: Synthesized
239 <400> SEQUENCE: 16
240 cgggactccg tagcccattg ctttttgag cgtcaacgaa tagcgtatta 50
242 <210> SEQ ID NO: 17
243 <211> LENGTH: 50
244 <212> TYPE: DNA
245 <213> ORGANISM: Artificial Sequence
247 <220> FEATURE:
248 <223> OTHER INFORMATION: Synthesized
250 <400> SEQUENCE: 17
251 ccacatgtc ttctcgagcc gaaccgatag ttacgtcata cctcccgtat 50
253 <210> SEQ ID NO: 18
254 <211> LENGTH: 50
255 <212> TYPE: DNA
256 <213> ORGANISM: Artificial Sequence
258 <220> FEATURE:
259 <223> OTHER INFORMATION: Synthesized
261 <400> SEQUENCE: 18
262 gccagattgc tgctaccagc ggtacgaaat agtgaagtgt tcgtgactat 50
264 <210> SEQ ID NO: 19
265 <211> LENGTH: 50
266 <212> TYPE: DNA

```

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Input Set : A:\463.4.TXT

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```

267 <213> ORGANISM: Artificial Sequence
269 <220> FEATURE:
270 <223> OTHER INFORMATION: Synthesized
272 <400> SEQUENCE: 19
273 ataggccatg ctttggttag cggcaccgta tagtgtacct gcccttatcg      50
275 <210> SEQ ID NO: 20
276 <211> LENGTH: 50
277 <212> TYPE: DNA
278 <213> ORGANISM: Artificial Sequence
280 <220> FEATURE:
281 <223> OTHER INFORMATION: Synthesized
283 <400> SEQUENCE: 20
284 tctgctctcc tctattctag cagtgcagcg aaatatgtcg aatagtcggt      50
286 <210> SEQ ID NO: 21
287 <211> LENGTH: 50
288 <212> TYPE: DNA
289 <213> ORGANISM: Artificial Sequence
291 <220> FEATURE:
292 <223> OTHER INFORMATION: Synthesized
294 <400> SEQUENCE: 21
295 ttgccagca tagtcggcag acgtggtggt agcgacacga taggcccgggt      50
297 <210> SEQ ID NO: 22
298 <211> LENGTH: 50
299 <212> TYPE: DNA
300 <213> ORGANISM: Artificial Sequence
302 <220> FEATURE:
303 <223> OTHER INFORMATION: Synthesized
305 <400> SEQUENCE: 22
306 ttgctagctc ggctgaactt ctgtagcgca accgaaatag tgaggcttga      50
308 <210> SEQ ID NO: 23
309 <211> LENGTH: 107
310 <212> TYPE: DNA
311 <213> ORGANISM: Artificial Sequence
313 <220> FEATURE:
314 <223> OTHER INFORMATION: Synthesized
W--> 316 <221> NAME/KEY: misc_difference
317 <222> LOCATION: 28
318 <223> OTHER INFORMATION: N = Adenosine Ribonucleotide
W--> 320 <221> misc_feature
321 <222> LOCATION: (49)...(88)
322 <223> OTHER INFORMATION: N = A, G, C, or T
W--> 324 <400> 23
W--> 325 gggacgaatt ctaatacgac tcactatngg aagagatggc gacatctcnn nnnnnnnnnn 60
W--> 326 nnnnnnnnnn nnnnnnnnnn nnnnnnnngt gacggtgaagc ttggcac      107
328 <210> SEQ ID NO: 24
329 <211> LENGTH: 49
330 <212> TYPE: DNA
331 <213> ORGANISM: Artificial Sequence
333 <220> FEATURE:

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**RAW SEQUENCE LISTING ERROR SUMMARY**  
**PATENT APPLICATION: US/09/423,035B**

DATE: 01/31/2003  
 TIME: 15:59:41

Input Set : A:\463.4.TXT  
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Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:2; N Pos. 8  
 Seq#:4; N Pos. 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35  
 Seq#:4; N Pos. 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55  
 Seq#:4; N Pos. 56, 57, 58, 59, 60, 61, 62, 63, 64, 65  
 Seq#:5; N Pos. 28  
 Seq#:6; N Pos. 28  
 Seq#:7; N Pos. 8  
 Seq#:8; N Pos. 8  
 Seq#:12; N Pos. 8  
 Seq#:13; N Pos. 28  
 Seq#:23; N Pos. 28, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67  
 Seq#:23; N Pos. 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87  
 Seq#:23; N Pos. 88  
 Seq#:50; N Pos. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53  
 Seq#:50; N Pos. 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73  
 Seq#:50; N Pos. 74, 75, 76, 77, 78, 79, 80, 81, 82, 83  
 Seq#:51; N Pos. 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54  
 Seq#:51; N Pos. 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74  
 Seq#:51; N Pos. 75, 76, 77, 78, 79, 80, 81, 82, 83, 84  
 Seq#:123; N Pos. 18  
 Seq#:128; N Pos. 22  
 Seq#:133; N Pos. 8, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47  
 Seq#:133; N Pos. 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66  
 Seq#:133; N Pos. 67, 68  
 Seq#:139; N Pos. 28  
 Seq#:140; N Pos. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25  
 Seq#:140; N Pos. 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44  
 Seq#:141; N Pos. 28  
 Seq#:143; N Pos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22  
 Seq#:143; N Pos. 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40  
 Seq#:146; N Pos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22  
 Seq#:146; N Pos. 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41  
 Seq#:146; N Pos. 42, 43, 44, 45, 46, 47, 48, 49, 50